REMARKS/ARGUMENTS

Claims 1-21 were previously pending in the application. Claims 1-3, 5-6, 8-9, 11-14, 16-17, and 19-20 are amended, and new claims 21-22 are added herein. Assuming the entry of this amendment, claims 1-22 are now pending in the application. The Applicant hereby requests further examination and reconsideration of the application in view of the foregoing amendments and these remarks.

To ensure proper antecedence:

- Claims 1 and 11 have been amended to recite "an outgoing signal" instead of "the outgoing signal";
- Claim 2 has been amended to recite "the incoming signal" instead of "incoming signal"; and
- Claim 13 has been amended to recite "the switch is adapted to terminate" instead of "step (a) comprises the step of terminating."

The Applicant explicitly submits that none of these amendments were made to overcome any prior art rejections.

On page 2 of the office action, the Examiner rejected claims 1-3, 8-14, and 19-21 under 35 U.S.C. 103(a) as being unpatentable over Peer in view of Schroeder. On page 5, the Examiner rejected claims 4-7 and 15-18 under 103(a) as being unpatentable over Peer in view of Schroeder, and further in view of Sawey. For the following reasons, the Applicant submits that all of the now-pending claims are allowable over the cited references.

<u>Claims 1 and 11-12</u>

According to currently amended claim 1, an incoming signal is received at a switch of a telecommunications network, and data in the received incoming signal is sliced into a plurality of sub-signals. Each sub-signal is divided into one or more subsets of data. A checksum function is applied to each subset of data to generate a checkbit for the subset, where the checkbit for each subset is added to the sub-signal to generate an augmented sub-signal. At least two copies of the augmented sub-signal are routed in parallel through redundant portions of a distributed switch fabric of the switch to generate at least two routed sub-signals for the sub-signal. The distributed switch fabric has multiple switch components adapted to route different portions of each of a plurality of incoming signals in parallel. A checksum analysis is performed on at least one of the routed sub-signals, and one of the routed sub-signals is selected in accordance with the checksum analysis. Data from the selected routed sub-signals corresponding to the plurality of sub-signals are combined to generate an outgoing signal.

In rejecting original claim 1, the Examiner cited a combination of teachings in Peer and Schroeder. The Applicant submits that the rejection of original claim 1 was improper because those references do not teach or even suggest the combination of features recited in original claim 1.

Moreover, claim 1 has been amended to further clarify the differences between the present invention and the teachings of the cited references. In particular, currently amended claim 1 is directed to a method for routing signals in <u>a switch</u> of a telecommunications network, where the incoming signal is received <u>at the switch</u>. According to currently amended claim 1, the distributed switch fabric of the switch has multiple switch components adapted to route different portions of each of a plurality of incoming signals in parallel. Support for these amendments is found in Figs. 1-3 and on page 6, lines 9-20, of the specification.

The invention of claim 1 is related to the routing of signals in a switch, which is a particular node in a telecommunications network. The cited references, including Peer, the Examiner's primary reference, are related to the routing of signals between two nodes of a telecommunications network. In particular, Peer teaches a network-level protection scheme in which two copies of a signal (e.g., D4/ESF of Fig. 4) are transmitted from one node (e.g., transmitter 401) of the network over two parallel links (e.g., 421 and 431) to another node (e.g., receiver 402) of the network.

As such, the teachings in Peer and the invention of claim 1 are related to different levels of signal routing: Peer teaches inter-node signal routing (i.e., the routing of signals between different nodes), while the invention of claim 1 is related to intra-node signal routing (i.e., the routing of signals within a single node).

Moreover, Peer has absolutely nothing to do with the routing of signals in switches having distributed switch fabrics. Currently amended claim 1 explicitly defines that the recited distributed switch fabric has multiple switch components adapted to route different portions of each of a plurality of incoming signals in parallel. The only switches taught in Peer are switch 302 of Fig. 3 and switch 620 of Fig. 6, neither of which has a distributed switch fabric as that term is explicitly defined in currently amended claim 1.

The Examiner cited column 4, lines 61-67, of Peer as teaching "routing at least two copies of the augmented sub-signal in parallel through redundant portions of a distributed switch fabric to generate at least two routed sub-signals for the sub-signal." This passage of Peer has nothing to do with a distributed switch fabric of a switch. Rather, this passage teaches that two copies of a digital signal data stream are transmitted over two parallel communication links between two different nodes of a telecommunications network.

The Examiner's own admissions highlight the differences between Peer's teachings related to inter-node signal routing and the invention of claim 1, which is related to the intra-node signal routing of a switch having a distributed switch fabric. In particular, the Examiner admitted that Peer does not teach either a slicer that slices an incoming signal into a plurality of sub-signals or a combiner that combines data from different routed sub-signals to generate an outgoing signal. These are features of the intra-nodal signal routing of a switch. Peer does not teach or even suggest such features, because Peer has nothing to do with intra-nodal signal routing, let alone intra-nodal signal routing in a switch.

The Examiner cited Schroeder as providing the teachings missing from Peer. In particular, the Examiner stated that Schroeder teaches a TCP resegmentation method, where data is segmented into one or more sub-segments. However, the segmentation taught in Schroeder has nothing to do with the intra-nodal routing of data in parallel through a switch. Rather, the segmentation taught in Schroeder is related to the segmenting of data into multiple sub-segments for inter-nodal transmission in serial between two different nodes of a network. See, e.g., column 1, lines 7-10, of Schroeder which explicitly states that "the invention relates to establishing and maintaining efficient communications between two IP hosts."

(For the record, the Applicant submits that, like Peer and Schroeder, the teachings of Sawey are also directed to inter-nodal signal routing and not intra-nodal signal routing, let alone having anything to do with switches having distributed switch fabrics.)

According to currently amended claim 1, each sub-signal is divided into one or more subsets of data and a checksum function is applied to each subset of data to generate a checkbit for the subset, which checkbit is added to the sub-signal to generate an augmented sub-signal. In rejecting these features of claim 1, the Examiner cited column 5, lines 5-23, of Peer. The Applicant submits that the

teachings in this passage of Peer are directed to the processing of a received signal that already has check data in it, not the processing of a received signal to add check data to it. In particular, column 5, lines 5-23, of Peer describe the process of synchronizing the two redundant data streams so that their already-existing check data can be properly analyzed to detect the presence or absence of errors in each data stream. If anything, these teachings in Peer are more closely related to steps (c)(5) and (c)(6) of claim 1, where a checksum analysis is performed on at least one routed sub-signal and one of the routed sub-signals is selected based on the checksum analysis. These are not teachings related to the adding of check data to a signal, as in steps (c)(2) and (c)(3) of claim 1.

To summarize the main arguments, the invention of claim 1 is directed to the intra-nodal routing of signals in a particular node (i.e., a switch) of a telecommunications network, while each of the cited references is related to the inter-nodal routing of signals between two different nodes of a telecommunications network. Moreover, the invention of claim 1 is directed to the routing of signals through the distributed switch fabric of the switch. None of the cited references has anything to do with distributed switch fabrics as that term is explicitly defined in currently amended claim 1.

For all these reasons, the Applicant submits that claim 1 is allowable over the cited references. For similar reasons, the Applicant submits that claims 11 and 12 are allowable over the cited references. Since the rest of the claims depend variously from claims 1 and 12, it is further submitted that those claims are also allowable over the cited references.

Claims 3 and 14

In rejecting original claims 3 and 14, the Examiner argued that "data and CRC-6 are separate in an ESF," apparently distinguishing between the "data" portion and the "CRC-6" portion in the ESF. Claims 3 and 14 have been amended to clarify that the addition of the checkbits does not increase the size of the augmented sub-signal routed through the distributed switch fabric relative to the size of the corresponding sub-signal.

In rejecting claims 2 and 13, the Examiner appeared to argue that Peer's D4 data stream was an example of the sub-signal of claim 2 and that Peer's ESF data stream was an example of the augmented sub-signal of claim 2. Since claims 3 and 14 depend from claims 2 and 13, respectively, in order for the Examiner's rejection of claims 3 and 14 to be proper, the addition of Peer's check data cannot increase the size of Peer's ESF data stream relative to the size of Peer's D4 data stream. However, according to column 2, lines 8-19, Peer's D4 data stream has 12 frames of data, while Peer's ESF data stream has 24 frames of data.

The Applicant submits that this provides additional reasons for the allowability of claims 3 and 14 (and therefore claims 4-6 and 15-17) over the cited references.

Claims 5-6, 8-9, 16-17, and 19-20

According to claims 5, 8, 16, and 19, the selection of routed sub-signals for each sub-signal for the incoming signal is independent of the selection of routed sub-signals for each other sub-signal for the incoming signal. According to claims 6, 9, 17, and 20, the selection of routed sub-signals for any one sub-signal for the incoming signal affects the selection of routed sub-signals for all other sub-signals for the incoming signal.

In rejecting original claims 5 and 16, the Examiner stated on page 5 that "Peer's system provides errors-free ESF super frames to the output port, wherein the ESFs are created from D4 data stream."

Based on this statement, the Examiner somehow concluded: "Therefore, the selection of routed sub-signals for each sub-signal is <u>independent</u> of the selection of routed sub-signals for each other sub-signal." In rejecting claims 6 and 17, the Examiner stated on page 6 that "ESFs are created from D4 data stream." Based on this similar statement, the Examiner somehow came to the opposite conclusion that "therefore, the selection of routed ESFs for any one ESF <u>affects</u> the selection of routes ESFs for all other ESFs." The Applicant cannot understand how the same statement (i.e., "the ESFs are created from D4 data stream") can be properly used to support opposite conclusions (i.e., one conclusion being that the selection of routed sub-signals for each sub-signal "is independent of" the selection of routed sub-signals for each other sub-signal and the other conclusion being that the selection of routed sub-signals for any one sub-signal "affects" the selection of routed sub-signals for all other sub-signals). Moreover, the Applicant does not understand how either conclusion follows from the Examiner's statements. In particular, the Applicant does not understand how the fact that "the ESFs are created from D4 data stream" teaches or suggests anything about whether the selection of routed sub-signals is independent of or affects the selection of other routed sub-signals.

Not only that, but, immediately after concluding that Peer teaches the claimed selection of routed sub-signals, the Examiner admitted that "Peer does not disclose the sub-signal." If Peer does not disclose the sub-signal, then how can Peer teach anything about relationship between the selections of different routed sub-signals?

In fact, the cited references do not teach or even suggest the features recited either in claims 5, 8, 16, and 19 or in claims 6, 9, 17, and 20. The Applicant submits that this provides additional reasons for the allowability of those eight claims over the cited references.

<u>Claims 22-23</u>

According to new claims 22-23, each augmented sub-signal is the same size as the corresponding sub-signal. Since, as described previously, Peer's D4 and ESF data streams are based on formats having different sizes, the Applicant submits that this provides additional reasons for the allowability of claims 22-23 over the cited references.

In view of the foregoing, the Applicant submits therefore that the rejections of claims under Section 103(a) have been overcome.

In view of the above amendments and remarks, the Applicant believes that the now-pending claims are in condition for allowance. Therefore, the Applicant believes that the entire application is now in condition for allowance, and early and favorable action is respectfully solicited.

Respectfully submitted,

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